

**THE DEVELOPMENT OF
HONEY EXPORTS FROM RWANDA**

November 2005

TABLE OF CONTENTS

LIST OF ACRONYMS.....	iii
EXECUTIVE SUMMARY.....	1
1. CURRENT SITUATION.....	2
1.1. Bee Forage.....	2
1.2. Bee Colonies.....	3
1.3. Bee Hives.....	3
1.4. Honey Quality	3
1.5. Organization of Producers	4
1.6. Marketing of Honey.....	5
2. RWANDAN AND WESTERN BEE HIVES.....	5
3. HARVESTING AND PROCESSING HONEY FROM RWANDAN HIVES.....	6
4. CRITICAL CONTROL POINTS (HACCP ANALYSIS).....	6
5. RESIDUE RISK IN RWANDAN HONEY.....	7
6. RESIDUE MONITORING SCHEME (RMS) SET UP PROCESS	8
7. ORGANIC AND FAIRTRADE MARKETS	8
8. HONEY EXPORT REQUIREMENTS.....	9
8.1. Set up Residue Monitoring Scheme.....	9
8.2. Private Company to Buy Honey.....	9
8.3. Identify Export Market.....	9
8.4. Honey Quality Specification.....	9
8.5.Support of Exporter Initial Costs	10
9.PLAN FOR HONEY EXPORTATION	10
10. ROLE OF THE GOVERNMENT.....	12
ANNEXES	14
Annex 1: Monitoring Plan for Residues in Honey from Rwanda.....	15
Annex 2: Residue Monitoring Plan for Rwanda, Table of Results.....	18
Annex 3: Specification for Rwandan Honey.....	22
Annex 4: Summary of UK honey Imports, 2001- 2005.....	23
Annex 5: Details of UK Honey Imports, 2004	25
Annex 6: Zambian Organic Certification Management Plan	26

Annex 7: Export Quality Assurance Checklist	30
Annex 8: FLO Fairtrade Honey Criteria	32
Annex 9: Soil Association Organic Honey Standards	36
Annex 10: Honey Grading Photos.....	40
Annex 11: Commercial and Pollen Analysis of Rwandan Honey	41
Annex 12: Rwanda Map.....	42
Annex 13: EU Decision 04-432.....	43

LIST OF ACRONYMS

ADAR :	Assistance à la Dynamisation de l'Agribusiness au Rwanda.
ARDI :	Association Rwandaise pour le Développement Intégré.
EU :	European Union.
HACCP:	Hazard Analysis of Critical Control Points.
HMF:	Hydroxymethyl Furfural.
NWBP :	North West bee Products.
RMS :	Residue Monitoring Scheme.
WCS:	Wildlife Conservation Society.

EXECUTIVE SUMMARY

Despite having good bee forage, local knowledge on efficient production methods and a vast number of NGOs working to promote beekeeping, the health of the Rwandan bee industry is not good. Most beekeepers are elderly and have few hives. Young people do not see beekeeping as a wise career choice; it is merely a small scale sideline activity. The shops in Kigali are full of nicely packaged imported honey which customers prefer to poorly packaged Rwandan honey at less than half the price.

Other countries in the region such as Tanzania, Kenya and Zambia have large honey industries; I will attempt to show how Rwanda could develop her honey industry to be a useful source of income for the rural masses and to help promote conservation of her forest resources.

The most common complaint of the beekeepers is that months after the harvest they are still remaining with much of the crop unsold. They could produce more honey with their existing beekeeping methods but they have no confidence that they would be able to sell more honey. What is needed is an organised marketing operation which would provide every beekeeper with a market for as much honey as he or she would want to sell.

Beekeeping and conservation of Rwanda's scarce remaining forests are directly related. Nyungwe contains large areas dominated by the creeper umukipfu (*Sericostachys scandens*) which is an excellent honey source but flowers only every 15 years. Umukipfu will flower in 2006 producing a bumper harvest of honey and will then die back causing a fire hazard from the large amounts of dry vegetation. Honey hunters can easily cause destructive fires in this situation. Beekeepers must be organised over the next year and shown that they will be able to sell a large amount of honey in 2006. They will then put their efforts into hive construction rather than disorganised and unproductive honey hunting.

If a revitalised beekeeping industry is to play a role in conservation the number of hives and apiaries must be greatly increased from the present situation, by 5 fold or more, so that beekeeping becomes a vital part of the village economy and can transform the fortunes of the active beekeepers.

The following report was prepared and submitted in June 2005; due to delays in procuring approval of funding for the honey laboratory analysis, however, it was not finalized until the month of November.

1. CURRENT SITUATION

1.1. Bee Forage

Most of Rwanda is heavily cultivated, in these areas bees mostly forage on various Eucalyptus species. The best bee forage that I saw comes from the remaining indigenous forest in Nyungwe and Volcanoes National Park. These forests contain a large number of species producing honey and beekeepers prefer to put their bees in these areas because crops are larger and more reliable. The diverse forage includes both trees and herbaceous species flowering throughout the year, with a continual food source the colony can expand to swarming size several times each year and will produce a good crop.

Nyungwe contains large areas dominated by the creeper umukipfu (*Sericostachys scandens*) which is an excellent honey source but flowers only every 15 years. Umukipfu will flower in 2006 producing a bumper harvest of honey.

Principle bee forage plants identified so far from discussions with beekeepers are:

- Syzygium guiniense: umugoti.
- Parinari excelsa: icknazi.
- Brillantasia cicatricosa: umunayo.
- Viretaria major: urukiryi.
- Bothriocline longipes: uruherhe.
- Macaranga spp: umusekera.
- Eritrina abyssinica: umuko.
- Sericostachys scandens: umukipfu.
- Eucalyptus.
- Coffee.
- Pine.

All beekeepers agreed that the natural forest was the most productive habitat for honey production and that productivity of hives had decreased over living memory as the area of forest had decreased. Hives situated within the forest were most productive but hives situated on the forest margin could also produce well. More information on bee plants will emerge from study of the pollen in honey samples, since it is possible to identify the plant from the shape of its pollen.

1.2. Bee Colonies

Bee colonies are essentially wild and occupy the beekeeper's log hives when a swarm is looking for a new nesting site. Swarms do not occupy frame hives readily. Beekeepers did not report any problems getting log/other traditional hives occupied and most apiaries had a high rate of occupancy.

There were no obvious signs of bee diseases and colonies looked healthy. Some colonies contained pests such as *Braulae* (wingless flies), lesser hive beetle and lesser wax moth; however none of these pests will do serious harm to bee colonies.

1.3. Bee Hives

Rwandan hives are made from hollow logs or basket ware cylinders coated in dried mud. There are some frame hives supplied on a subsidised basis by development agencies. Frame hive beekeeping does not seem to be viable as an alternative to Rwandan hives as beekeepers are not investing in new frame hives; they prefer to invest in Rwandan hives. Reasons for this could be:

- Frame hives have not proven to be more productive
- A beekeeper with Rwandan hives gets a 50% greater rate of return per kg honey produced than a frame hive beekeeper, as the latter has to pay back a loan for the hives.
- Beekeepers get stung more when working with frame hives.
- The frame hives are so poorly made that it is difficult to get the honey out without annoying the bees.
- The heavy boxes of honey have to be carried long distances to the extractor.

1.4. Honey Quality

There are no major problems with honey from either type of hive which could not be removed by some simple training along with quality control at the point of purchase. Most Rwandan honey is of export quality at the moment. Beekeepers would benefit from the provision of some standard nylon sieves for straining honey.

Problems which will need to be tackled by training are:

- Overheating of honey caused by melting honey combs on a fire, a practice which is used simply because the beekeepers do not know how to separate the honey by straining.
- High moisture content caused by harvesting unripe combs of honey.
- Overheating caused by failure to store the honey in a cool place after it has been purchased by the trader.

1.5. Organization of Producers

Producers are at the moment organized in a bewildering variety of structures, both large and small, which are involved in relationships with a variety of NGOs. The result is that no one is in a position to have a clear idea of the number of beekeepers, hives etc. A lot of time is wasted on unprofitable meetings and discussions.

There would appear to be around 100 beekeeping groups around the Nyungwe forest containing a total of approximately 1,500 members. The actual number of active beekeepers is probably much lower than this figure. A more accurate picture of the number of beekeepers will only be available once systematic marketing is taking place and it can be determined which beekeepers are producing honey.

At the moment some hives are owned privately and others are the collective property of the group. If production is to expand it would seem to be more likely to succeed if efforts are made to encourage private ownership of hives.

Most beekeepers are middle aged or elderly; there are few young people in the groups. It seems that young people do not see beekeeping as a profitable occupation to make into their career. They perceive it to be a small scale sideline activity which generates the occasional bit of pocket money, rather than a potential livelihood. This perception would change if young people saw some beekeepers getting a good sum of cash when they sell 15 or 20 buckets of honey, generating around FRW 250,000 (ca. US\$445). This sum would be enough to invest in a small business or make a real difference to the beekeeper's family's standard of living.

The aim should be to encourage ambitious young people to enter into honey production as a secure business, which can be expanded from their own resources and which can support their families in years to come.

1.6. Marketing of Honey

The main problem expressed by the beekeepers is lack of a good market; honey remains unsold for months as the producer waits for casual customers to arrive. All beekeepers consulted would prefer a situation where they could sell all their honey straight after harvest, even if this meant selling it at a lower price.

Honey prices quoted by beekeepers varied from FRW 600 to FRW 1,000 per kg (ca. US\$1.07 and \$1.79, respectively), reflecting the sporadic nature of the market and the size of the harvest. When asked if they would accept a lower price for bulk sales they replied that they were prepared to negotiate if they could sell their crop for cash at one delivery.

2. RWANDAN AND WESTERN BEE HIVES

Rwandan beekeepers usually construct their hives from hollow logs or woven baskets constructed to form a hollow cylinder. The hives are placed on stands near to the ground or high in the branches of a tree. A wild swarm will occupy the hive and build honeycombs, which are later harvested by the beekeeper. These hives have been developed to use local materials which are often freely available.

Many NGOs have subsidized the introduction of the frame hive which is used in the USA, Europe, etc.; the expectation is that these hives will be far more productive. I saw no evidence that this was the case; the amount of honey produced was the same or less than from a Rwandan hive. After the beekeeper has paid for the cost of the frame hive out of his honey income s/he had less cash than their neighbors who continued with Rwandan hives. This is the reason for the lack of success of frame hives in Rwanda, and will only be exacerbated once the donor subsidies have been removed.

Beekeepers with frame hives loaned from ARDI received only FRW 333 (ca. US\$0.60) per kg after loans were deducted, which was the lowest price I encountered amongst all the beekeepers I encountered. These beekeepers also had to carry their frames of honey many kilometers to a central honey extraction machine whilst beekeepers with log hives could extract their honey in the village.

3. HARVESTING AND PROCESSING HONEY FROM RWANDAN HIVES

Harvesting honey from log hives requires care if the honey quality is not to be compromised by mixing ripe honey with unripe honey, pollen, brood, etc. It is possible to produce export quality honey from log hives, as has been shown by North West Bee Products in Zambia, but only after effective training of the beekeepers and consistent quality control at the buying point.

The most critical stage is the harvesting by the beekeeper; it is vital to separate only the ripe sealed combs for export, using the other combs locally for beer brewing and food. Annex 10 shows the correct type of comb to select and the unripe honey, pollen and brood that must be avoided.

Once the honey has been graded and the combs for sale selected, they are processed to separate honey from beeswax. This can be done using any sieve with a mesh size of about 2 to 5mm. The honey will easily flow through the sieve, leaving the wax and a small amount of honey behind which can be used for beer brewing.

It is important that combs are processed while still warm from the hive, otherwise crystallisation can start. The only way to separate crystallised comb honey is to warm it to melt the honey. It would be almost impossible to do this in a village situation without damaging the honey by excess heating so this must be avoided at all costs.

4. CRITICAL CONTROL POINTS (HACCP ANALYSIS)

Annex 7 shows the checklist of quality control points when processing, buying and packing honey for export. Of these the following are the most critical:

Beekeeper

- Avoid using excessive smoke when harvesting.
- Select only export quality combs.
- Avoid using contaminated containers for honey.
- Do not heat comb honey.

Buying in field

- Reject honey with water content more than 19%.
- Reject honey with excess pollen.
- Reject overheated honey.

Storage

- Store at average temperature less than 25C.

Packing into Drums

- Check each bucket of honey again as in field buying.
- Ensure drums are not contaminated.

Export

- Container should be moved without any delay (maximum 14 days from packing into the container and placing same on board).
- Do not park container in direct sun.

5. RESIDUE RISK IN RWANDAN HONEY

Before any honey can be exported to the EU it will be necessary to establish a scheme which will monitor Rwandan honey for chemical residues from antibiotics, pesticides, heavy metals, etc. The plan for this scheme will need to be submitted for approval to the EU. Once approved Rwanda, will be added to the list of countries approved for export of various animal products. These are published from time to time in the EU Official Journal, e.g. Commission Decision 04-432 (Annex 12).

If a country is not on this list, Port Health authorities will not allow the goods entry into the EU. Once on the list, all exporters in Rwanda will be able to export honey to the EU. Every year samples must be taken from all honey which could potentially be exported and analyzed for a wide range of chemical residues, with the results submitted to the EU. See Annex 1 for the draft Residue Monitoring Scheme (RMS) plan.

In the case of Rwanda, risk analysis shows very little likelihood of contamination from any source: veterinary medicines have never been used in beekeeping, use of pesticides in agriculture is limited and there are no industrial sources of pollution. The residue monitoring can therefore be on a limited level, in accordance with the low level of risk. A baseline survey of honey from around the country has not shown any evidence of contamination from chemical residues.

6. RESIDUE MONITORING SCHEME (RMS) SET UP PROCESS

The establishment of an approved RMS consists of the following steps; the process can be completed in about 12 weeks:

- Carry out analysis of baseline samples.
- Submit draft plan to the EU for comment.
- Draw up RMS plan and submit to the EU together with baseline results.
- RMS is approved through various EU Committees.
- Rwanda is listed in a Commission Decision which is published in an Official Journal.
- Exports from Rwanda to the EU can now commence.

By March 31st 2006, the results of an ongoing monitoring analysis together with the RMS plan for next year must be submitted.

7. ORGANIC AND FAIRTRADE MARKETS

As a niche product, extra value could be added to Rwandan honey through Organic and Fairtrade certification. However, the paperwork required for these certificates is a considerable burden on a small scale operation and might not be worthwhile in the case of Rwanda (see annex 5 for details of how Zambian beekeepers manage this process). The cost burden of annual inspections would also be high. As beekeeping is usually carried out on the margins of agricultural land, some careful arguments would be required in order to prove compliance with organic regulation 5.06.11. (See Annex 8: Soil Association Organic Honey Standards).

Fairtrade certification might be easier to obtain if a beekeeping association could be established in compliance with the Fairtrade Labeling Organization (FLO) standards. From a marketing point of view, Fairtrade certification would be more valuable. See Annex 7 for FLO honey standards.

8. HONEY EXPORT REQUIREMENTS

8.1. Set up Residue Monitoring Scheme

Before Rwandan honey can be exported to the EU there must be a scheme established to monitor chemical residues in the honey and this scheme must be approved by the EU. As the risk of dangerous levels of residues from antibiotics used to treat bee diseases, pesticides, heavy metals, etc. is almost non-existent in Rwanda, it will not be necessary to set up a very elaborate scheme. A basic scheme is being established which will lead to Rwanda appearing on the list of countries satisfying directive 96/23/EC by August 2005.

8.2. Private Company to Buy Honey

Trading in honey is no different in essence than trading in other agricultural products and should be carried out by a private company with the necessary experience, staff, transport, finance, etc.

8.3. Identify Export Market

The international market for honey is dominated by the usual giant players such as China, Brazil, Argentina, and Australia. It will not be possible to compete with these suppliers on price so Rwanda must establish itself as a specialty supplier of unique honey from its unspoiled forests. In addition, Organic and Fairtrade certification would help cement a position in the niche honey market.

See Annexes 4 and 5 for information on UK honey export markets.

8.4. Honey Quality Specification

Export quality honey from Rwanda should conform to at least the following critical standards:

- Water content of 19% maximum
- Colour lighter than 85 mm pfund
- HMF less than 25 ppm (indicator of overheating)
- Free of Eucalyptus honey (indicated by pollen analysis and taste)
- From registered beekeepers

8.5. Support of Exporter Initial Costs

In order to set up a successful operation for the exportation of honey from Rwanda, money will have to be spent on many operations usually carried out by NGOs, e.g. training, meetings, producer registration, Fairtrade certification, etc. These costs will make the scheme unattractive to a private business, which in any case is unlikely to achieve a profit in the short term. The donor community should be prepared to support these activities if the common goal of revitalizing the livelihoods of thousands of rural people is to be achieved.

9. PLAN FOR HONEY EXPORTATION

Trial Quantity ~ 5,000kg September 2005.

First full shipment at least 1 x 18,000kg Sept 2006.

The exportation of Rwandan honey has a unique opportunity in that a species which flowers only once in 15 years, “Umukipfu”, will do so 2006. If an exporter can take full advantage of this bumper harvest, several years of slow growth will be bypassed.

Residue Monitoring Scheme: submit 01 June 2005

The submission of the RSM is in progress, awaiting results from the baseline survey. It is anticipated that submission to the EU for approval will occur by June 1st 2005; publication of the approval in an EU official journal should occur about 3 months there after.

Feasibility Study: completed 01 June 2005

The exporter will need to carry out a feasibility study and compile a business plan before committing to the development of honey exportation.

Inaugural Meeting: June 2005

A meeting of all beekeepers’ representatives in the target area should be held to advertise this scheme to the producers and to refine the plan with their feedback.

Registration of Beekeepers: July 2005

All participating beekeepers should be registered and issued with a registration number and record book. This register of at least 1,000 people will then be the basis for training, bucket distribution, Fairtrade and Organic Certification as well as traceability from the finished product back to producer.

Distribution of Buckets and Sieves: July 2005

Beekeepers cannot expand production without the proper containers in which to store their product. The purchasing company needs to own a large number of buckets which are loaned to the beekeepers and collected when full. Each group should be provided with a strong nylon sieve of the correct mesh size to speed up straining of honey and produce a standard product.

Recruit Extension Workers: July 2005

The beekeeper groups will need to be supervised by village based extension workers who will train new beekeepers, ensure that honey processing guidelines are being followed, keep records of buckets, etc. They would typically be energetic young men, with some education, who would be beekeepers from the target communities.

Training: July – August 2005

Training would be best carried out by employing some experienced Zambian extension workers for 2 months. As many details of the Rwandan export business will be similar to NWBP's operation in Zambia, these can be transferred at the grass roots level and demonstrated beekeeper to beekeeper. This will be by far the most effective form of training and the least expensive.

Training will include:

- Grading and quality control of honey
- Harvesting from beehives
- Honey processing
- Care of buckets
- Record keeping

Buying: August 2005

This initial buying should be seen as a trial run for 2006; it's primary purpose will be to iron out any difficulties and to confirm to the beekeepers that the exporter is serious about his intention to buy a great deal of honey in 2006.

Export: September 2005

The buckets of honey should be transferred to food grade steel 210 litre drums as soon as possible and exported to minimise damage from overheating.

Fairtrade Certification: October 2005

Fairtrade certification would be very helpful in establishing a market niche for Rwandan honey in the EU and USA. The structure of the beekeepers' representation in the buying process will have to be set up with FLO Fairtrade requirements in mind. An inspector will need to make a site visit before registration can be completed.

Establishment of More Apiaries

Hives around Nyungwe are crowded into a few large apiaries with up to 500 hives in one location, which limits production as the hives are competing with each other for a limited supply of nectar and pollen. Production will not be increased by adding more and more hives into the same locations; instead, the number of apiaries should be expanded so as to accommodate five to ten times the number of existent hives, with no more than 100 in each location.

There seems to be a perception amongst the beekeepers that it would be difficult to get permission for more sites, however, according to WCS officials this is not the case. It seems that the beekeepers need some assistance in negotiating with the authorities so that a large expansion of apiaries around and within the forest can be achieved.

10. ROLE OF THE GOVERNMENT

As honey production from Rwanda will always be a small scale industry, it will not be necessary for the government to invest resources but rather to enable the industry to develop by facilitating expansion and ensuring that bee colonies are not exposed to imported diseases.

- Residue Monitoring Scheme. The RMS will be on a small scale and can be carried out by the honey exporting industry itself. The Ministry of Agriculture should be informed of the results of residue monitoring but need not take any action unless a major threat is detected.
- Bee Diseases. The greatest threat to the Rwandan bee industry comes from the importation of highly infectious bee diseases which could wipe out a large proportion of hives in two to three years; this has happened in many other countries. The peasant beekeepers would have no access to high cost veterinary medicines. Rwanda should follow the example of other countries and ban the importation of live bees and used bee equipment.
- Apiary Sites. If beekeeping is to expand many new apiary sites around and within Nyungwe forest need to be established. The government has a role to play in facilitating this process by ensuring that beekeepers are guided through any necessary bureaucratic procedures.

ANNEXES

Annex 1: Monitoring Plan for Residues in Honey from Rwanda

Produced by members of the Rwanda Honey Exporters Group

09-May-2005

v 1.0

1. General Information

1.1. Legislation Concerning the use of substances of Annex 1

The relevant information will be forwarded at a later time. Due to the conditions of production of honey in Rwanda (no use of pesticides in the area of honey production, use of wild bees) the legislative framework concerning veterinary drugs and use of pesticides was not adapted to bees and honey production.

1.2. Infrastructure of the official services; information on co-ordination of the activities of central and regional departments

Honey production in Rwanda is carried out almost exclusively by small scale beekeepers operating in the forested areas of Rwanda. The honey produced by these beekeepers is at present mostly purchased locally, although the following companies plan at a future date to export honey:

- Murenzi Supply Company
- International Gorilla Conservation Programme

These companies have formed the Rwanda Honey Exporters Group with the aim of establishing uniform quality control throughout the industry thereby strengthening the reputation of Rwandan honey.

The potential for honey production is several times higher than present levels, the limiting factor currently being lack of a consistent market accessible to the isolated beekeepers. There is a tradition of small scale beekeeping in the country, the beekeepers being disadvantaged subsistence farmers who are desperately in need of the income that resumed sales of honey could bring. It is hoped that, if exports could be re-established, many more beekeepers could earn income from this commodity

Due to the importance of the above companies in honey production, handling most marketed production in Rwanda, the Monitoring Plan will cover as a matter of priority honey from these companies. It is an advantage to adopt this focus initially due to the central position of these companies in the honey industry and their influence on some 2,000 beekeepers who supply them with honey. From this basis the plan will be extended to cover other producers who become members of the Rwanda Honey Exporters Group.

Ministry of Agriculture officials are responsible for overseeing sampling of honey at depots of honey producers. These samples are sealed with numbered tamper proof tags, the official makes a manifest listing the samples taken and their tag numbers. The package of samples and the manifest is then sent by DHL to the laboratory in UK for analysis.

The results of this analysis are copied to:

- Ministry of Agriculture
- Exporter
- Importer

Rwanda Honey Exporters Group will be responsible for submitting the results of monitoring to DG SANCO by 31 March each year.

1.3. List of Official Laboratories

The samples shall be analysed at laboratories in Europe. The laboratories used will be :

Antibiotics & Sulphonamides, Heavy Metals, Pesticides and various bee treatment agents:

Applica Gmbh

Am Becketal 14

D- 28755 Bremen

Germany (yet to be decided)

1.4. Level of competence of the National Reference Laboratorie(s), as well as routine Laboratories, particularly as regards the implementation of Quality Assurance, or GLPs (Dec 98/179/EC).

Laboratory used will satisfy UK and EU legislation. Accreditation includes EN 17025, UKAS and GLP.

1.5. National tolerance limits (MRLs) for authorised substances and environmental contaminants

We will use UK tolerance limits for all approx 60 compounds screened for. Further data on each compound are listed in the table of results.

1.6. Official sampling procedures in the field, including information on how samples are secured after collection (using flow charts) (Dec 98/179/EC)

Samples will be taken from randomly selected drums of honey in the storerooms of honey producers. Samples will be taken during the honey harvest seasons. These samples are sealed with numbered tamper proof tags, the official makes a manifest listing the samples taken and their tag numbers. The package of samples and the manifest is then sent by DHL to the laboratory in UK for analysis.

1.7. Description of measures taken by the competent authorities where residues are detected

When residues are detected the consignment is condemned for export and destroyed or transformed, eg by mixing with water, for other uses.

2. Background Information on Production

2.1 Animal Species, products and total figures of production.

Products purchased by Rwanda Honey Exporters Group members are currently 5-10 tons per year honey. The honey is produced from African honey bees, *Apis mellifera adansonii*.

2.2. Type of Production

Honey is gathered from traditional log hives and some Langstroth hives situated mostly in Nyungwe and Volcanoes National Forests. The production area is covered with natural forest with the occasional small clearing for subsistence farming, there is very little use of agricultural chemicals in the area. Beekeepers are all small scale subsistence farmers owning a few hives. There are no known bee diseases or pests posing a threat to colonies.

2.3. Animal Species, products and total figures of production planned to be exported to EU

Honey planned to be exported are 5 tons in the first year rising to a maximum of 150 tons eventually. The honey is produced from African honey bees, *Apis mellifera adansonii*.

3. Scope of the Residue Plan

3.1. Groups of residues covered (as listed in Annex I);

Breakdown of substances monitored in each group by animal species and product (table)

See Table.

3.2. Details of analysis methods - screening/routine and confirmation, with action levels and detection limits

Analysis methods will be broad spectrum screening for a wide range of possible contaminants where a risk is possible. Samples will be taken at random from drums of honey in the store rooms. Each drum is essentially identical and homogenous so random sampling is justified in this case. All drums are routinely labelled with a code number identifying the producer. See table for details of detection and action levels.

4. Frequencies and Levels of the Controls

4.1 Number of samples to be taken for each sub-group of substances in the case of each species/product by reference to the number of animals slaughtered and volume of product output of animal origin in the previous year (Annex IV and Dec 97/747/EC). For third countries, the figures could only refer to exports to EU; in that case, guaranties for appropriate segregation and control must be given

10 samples will be taken in each sub- group, see table.

5.0 Targeting Criteria

5.1 Baseline Results

Results of analysis of baseline samples taken during April 2005 showed that honey produced in Rwanda was free from contamination by residues of the substances tested for. No residues of antibiotics (including chloramphenicol), organochlorines and organophosphorous compounds and substances known to be used in other parts of the world for treatment of bee diseases were detected. Heavy metals were within the level of action set. *(results not yet available)*

5.1 Changes based on analysis of the residue plan of the previous years (whereas such plans exists), particularly as regards problem areas identified

No problem areas have been identified.

6.0 Address for Correspondence

All correspondence concerning this plan and results of residue monitoring should be copied to:

- Mr David Wainwright: mail@tropicalforest.com
- Mr Donatien Murenzi: murenzidon@yahoo.fr

Annex 2: Residue Monitoring Plan for Rwanda, Table of Results

II.1.: Antibacterial substances, including sulphonamides, quinolones

Compounds Class	Compounds Type	Compounds Brand Name	Material: Honey Method: HPLC	Detection level	Level of action	Results
Sulphonamides	Sulphaguanidine		as above	10 ppb	50 ppb	n.d.
	Sulphanilamide		as above	10 ppb	50 ppb	n.d.
	Suphacetamide		as above	10 ppb	50 ppb	n.d.
	Sulphadiazine		as above	10 ppb	50 ppb	n.d.
	Sulphthiazole		as above	10 ppb	50 ppb	n.d.
	Sulphapyridine		as above	10 ppb	50 ppb	n.d.
	Sulphamerazine		as above	10 ppb	50 ppb	n.d.
	Sulphamether		as above	10 ppb	50 ppb	n.d.
	Sulphadimidine		as above	10 ppb	50 ppb	n.d.
	Sulphamethoxypyridazine		as above	20 ppb	50 ppb	n.d.
Tetracyclines	Oxytetracycline	Terramycin	as above	10 ppb	50 ppb	n.d.
	Tetracycline		as above	10 ppb	50 ppb	n.d.
	Chlortetracycline		as above	10 ppb	50 ppb	n.d.
	Doxycycline		as above	10 ppb	50 ppb	n.d.
Antibiotics	Chloramphenicol		as above	0.3 ppb	0.3 ppb	n.d.
	Streptomycin		as above	10 ppb	50 ppb	n.d.

II.2.: Carbamates and pyrethroids

Compounds Class	Compounds Type	Compounds Brand Name	Material: Honey Method: Gas Chromatography - MS	Detection level	Level of action	Results
Bee Treatment Agents	Coumaphos			5 ppb	50ppb	n.d.
	Bromopropylate			5 ppb	50 ppb	n.d.
	4'4'-Dibromobenzphenone			5 ppb	50 ppb	n.d.
	Fluvalinates	Apistan		5 ppb	50 ppb	n.d.

II.3.: Organochlorine compounds including PCBs

Compounds Class	Compounds Type	Compounds Brand Name	Material: Honey Method: Gas Chromatography	Detection level	Level of action	Results
Organochlorines	Aldrin		as above	10 ppb	50 ppb	n.d.
	Captan		as above	10 ppb	50 ppb	n.d.
	DDT & Isomers		as above	10 ppb	50 ppb	n.d.
	Dichlofluanid		as above	10 ppb	50 ppb	n.d.
	Dicofol		as above	20 ppb	50 ppb	n.d.
	Dieldrin		as above	10 ppb	50 ppb	n.d.
	Endosulfan		as above	10 ppb	50 ppb	n.d.
	Endrin		as above	10 ppb	50 ppb	n.d.
	Hexachlorobenzene		as above	10 ppb	50 ppb	n.d.
	HCH (3 isomers)		as above	10 ppb	50 ppb	n.d.
	Heptachlor		as above	10 ppb	50 ppb	n.d.
	Heptachlor epoxide		as above	10 ppb	50 ppb	n.d.
	Quintozene		as above	10 ppb	50 ppb	n.d.
	Tecnazene		as above	10 ppb	50 ppb	n.d.
	Vinclozolin		as above	10 ppb	50 ppb	n.d.
PCB's	PCB Congener 28		as above	5 ppb	50 ppb	n.d
	PCB Congener 52		as above	5 ppb	50 ppb	n.d
	PCB Congener 101		as above	5 ppb	50 ppb	n.d
	PCB Congener 118		as above	5 ppb	50 ppb	n.d
	PCB Congener 138		as above	5 ppb	50 ppb	n.d
	PCB Congener 153		as above	5 ppb	50 ppb	n.d
	PCB Congener 180		as above	5 ppb	50 ppb	n.d

II.4.: Organophosphorus compounds

Compounds Class	Compounds Type	Compounds Brand Name	Material: Honey Method: Gas Chromatography	Detection level	Level of action	Results
Organophosphorous	Bromophos		as above	50 ppb	100 ppb	n.d.
	Bromophos-ethyl		as above	50 ppb	100 ppb	n.d.
	Chlorfenvinphos		as above	50 ppb	100 ppb	n.d.
	Chlorpyrifos		as above	50 ppb	100 ppb	n.d.
	Chlorpyrifos-methyl		as above	50 ppb	100 ppb	n.d.
	Diazinon		as above	20 ppb	50 ppb	n.d.
	Dichlorvos		as above	50 ppb	100 ppb	n.d.
	Dimethoate		as above	50 ppb	100 ppb	n.d.
	Ethion		as above	50 ppb	100 ppb	n.d.
	Ethoprophos		as above	50 ppb	100 ppb	n.d.
	Etrimfos		as above	50 ppb	100 ppb	n.d.
	Fenitrophion		as above	50 ppb	100 ppb	n.d.
	Heptenophos		as above	50 ppb	100 ppb	n.d.
	Malathion		as above	50 ppb	100 ppb	n.d.
	Methacrifos		as above	50 ppb	100 ppb	n.d.
	Methidathion		as above	20 ppb	50 ppb	n.d.
	Mevinphos		as above	50 ppb	100 ppb	n.d.
	Parathion		as above	50 ppb	100 ppb	n.d.
	Parathion methyl		as above	50 ppb	100 ppb	n.d.
	Phosphamidon		as above	50 ppb	100 ppb	n.d.
	Pirimphos methyl		as above	50 ppb	100 ppb	n.d.
	Triazophos		as above	50 ppb	100 ppb	n.d.

II.5.: Chemical elements

Compounds Class	Compounds Type	Compounds Brand Name	Material: Honey Method: Atomic Absorbtion Chromatography	Detection level	Level of action	Results
Chemical Elements	Lead		as above	10 ppb	500 ppb	30 ppb
	Cadmium		as above	10 ppb	50 ppb	<10 ppb
	Arsenic		as above	10 ppb	100 ppb	<10 ppb
	Zinc		as above	100 ppb	2,500 ppb	1,200 ppb
	Copper		as above	100 ppb	500 ppb	300 ppb

Summary Residue Monitoring Plan for Rwandan Honey: Technical Data Table

Country: Rwanda Total honey production (tonnes) exported to the EU the previous year = Jan 04 - Dec 04 none

Period covered: April 2005 Baseline Period on which the Prod. Data or Export Auth. are based: baseline survey April 2005

Group of substances (Directive 96/23/EC)	Compounds	Material analysed/ Method	Detection level	Level of action	Number of samples	Results	Laboratory
B1 - Antibacterial substances, including sulphonamides, quinolones.	antibiotics 5 different sulphonamides 10 different chloramphenicol	Material: Honey Method: HPLC	10 ppb 10 ppb 0.3 ppb	50 ppb 50 ppb 0.3 ppb	10	nd	Applica Gmbh
B2c - Carbamates and pyrethroids	various bee treatment agents	Material: Honey Method: Gas Chromatography - MS	5 ppb	50 ppb	10	nd	Applica Gmbh
B3a - Organochlorine compounds including PCBs	organochlorines: 15 compounds	Material: Honey Method: Gas Chromatography	10 ppb	50 ppb	10	nd	Applica Gmbh
	PCBs: 7 compounds		5 ppb	50 ppb			
B3b - Organophosphorus compounds	22 different compounds	Material: Honey Method: Gas Chromatography	50 ppb	100 ppb	10	nd	Applica Gmbh
B3c - Chemical elements	Lead	Material: Honey Method: Atomic Absorption Spectroscopy	10 ppb	500 ppb	10	30 ppb	Applica Gmbh
	Cadmium		10 ppb	50 ppb		<10 ppb	
	Arsenic		10 ppb	100 ppb		<10 ppb	
	Zinc		100 ppb	2,500 ppb		1,200 ppb	
	Copper		100 ppb	500 ppb		300 ppb	

Annex 3: Specification for Rwandan Honey

Buyer: Tropical Forest Products Ltd
PO Box 92
Aberystwyth
SY23 1AA, UK

Supplier: Murenzi Supply Company Ltd.

Item: Rwandan multifloral honey from indigenous forest species.

Production Area: Hives to be situated less than 3km or within Nyungwe Forest Reserve.

Producers: Traditional or modern hive beekeepers registered and trained by Supplier.

Fair Trade Certification: FLO registration by June 2006.

Organic Certification: If possible.

Packaging: 210litre food grade steel drums.

Availability: August 2005.

Analysis:

- moisture less than 19%.
- colour less than 85 mm pfund.
- HMF less than 20 ppm.
- Pollen analysis and taste indicate free from Eucalyptus honey.

Price: GBP 1,200 per mt FOB Kigali or equivalent CIF Felixstowe.

Quantity: Trial quantity during 2005, full 20' containers (62 x 295kg drums) during 2006.

Traceability: Each drum to be supplied with manifest listing registered producer numbers of beekeepers supplying the honey.

Annex 4: Summary of UK honey Imports, 2001- 2005

	All Countries 2001				Argentina 2001			
	tons/ month	tons cumulative	£ month	£/t	tons	tons cumulative	£/Month	£/t
Jan	2 643	2 643	1 502 897	569	261	261	167 239	642
Feb	1 284	3 927	891 213	694	125	385	92 526	742
March	1 305	5 232	991 333	760	303	689	197 992	653
April	1 248	6 480	961 165	770	297	986	202 421	682
May	1 468	7 948	1 234 625	841	366	1 352	286 016	781
June	2 641	10 589	1 896 600	718	321	1 673	243 271	758
July	2 253	12 842	1 672 906	743	384	2 057	289 642	754
August	2 098	14 940	1 542 583	735	323	2 380	217 135	673
September	1 770	16 710	1 381 296	780	380	2 760	314 990	828
October	2 583	19 293	1 905 623	738	565	3 325	406 128	719
November	2 208	21 501	1 711 419	775	379	3 704	303 651	801
December	844	22 345	708 887	840	200	3 905	149 432	745
			16 400 547				2 870 443	

	All Countries 2002				Argentina 2002			
	tons/ month	tons cumulative	£ month	£/t	tons	tons cumulative	£/Month	£/t
Jan	1 932	1 932	1 444 967	748	137	137	123 226	899
Feb	296	2 228	350 113	1 183	-	137	-	0
March	1 426	3 654	1 492 896	1 047	606	743	533 055	880
April	3 011	6 665	3 075 712	1 021	1 821	2 564	1 651 957	907
May	4 083	10 748	4 316 281	1 057	2 631	5 196	2 552 522	970
June	3 558	14 306	4 099 133	1 152	2 046	7 242	2 169 032	1 060
July	2 646	16 952	3 323 953	1 256	1 340	8 582	1 499 658	1 119
August	2 090	19 042	2 789 434	1 335	773	9 354	889 640	1 151
September	777	19 819	1 387 087	1 785	327	9 681	415 710	1 273
October	735	20 554	1 070 483	1 457	120	9 801	195 975	1 628
November	761	21 314	1 273 180	1 674	170	9 971	229 106	1 350
December	664	21 978	1 090 502	1 643	136	10 107	206 834	1 519
			25 713 741				10 466 715	

	All Countries 2003				Argentina 2003			
	tons/ month	tons cumulative	£ month	£/t	tons/ month	tons cumulative	£ month	£/t
Jan	462	462	834 675	1 807	99	99	141 625	1 428
Feb	374	836	586 683	1 569	100	200	124 408	1 240
March	990	1 825	1 584 735	1 601	394	593	526 671	1 338
April	1 689	3 514	2 775 459	1 643	685	1 278	1 039 445	1 517
May	2 402	5 917	4 266 098	1 776	1 366	2 644	2 217 773	1 624
June	1 869	7 786	3 375 138	1 806	972	3 616	1 593 032	1 639
July	2 694	10 480	4 807 204	1 784	1 016	4 632	1 611 922	1 587
August	2 543	13 023	4 590 765	1 805	1 059	5 691	1 715 157	1 620
September	1 143	14 165	2 143 170	1 876	285	5 976	436 715	1 533
October	1 108	15 273	2 034 228	1 836	303	6 279	463 578	1 529
November	796	16 070	1 385 286	1 739	162	6 442	224 083	1 379
December	756	16 826	1 385 545	1 833	318	6 760	455 631	1 433
			29 768 986				10 550 040	

	All Countries 2004				Argentina 2004			
	tons/ month	tons cumulative	£ month	£/t	tons/ month	tons cumulative	£ month	£/t
Jan	904	904	1 537 045	1 699	98	98	137 864	1 401
Feb	1 220	2 125	1 838 587	1 507	392	490	548 050	1 398
March	1 505	3 630	2 563 830	1 703	224	715	303 491	1 354
April	1 929	5 559	2 937 627	1 523	449	1 164	618 001	1 375
May	1 747	7 306	2 740 231	1 569	273	1 437	400 164	1 467
June	2 882	10 188	4 177 765	1 450	524	1 961	768 559	1 467
July	7 097	17 285	3 289 463	464	361	2 322	451 770	1 250
August	2 471	19 755	3 399 251	1 376	457	2 779	541 413	1 186
September	2 004	21 760	2 049 625	1 023	553	3 331	613 653	1 111
October	865	22 625	1 268 110	1 466	184	3 515	186 253	1 012
November	595	23 220	758 248	1 274	176	3 691	176 868	1 005
December	836	24 056	1 094 798	1 310	267	3 959	237 388	888
			27 654 580				4 983 474	

	All Countries 2005				Argentina 2005			
	tons/ month	tons cumulative	£ month	£/t	tons/ month	tons cumulative	£ month	£/t
Jan	981	981	1 451 354	1 480	84	84	67 558	806
Feb	1 126	2 107	1 271 804	1 129	326	410	254 445	780
March	1 760	3 867	1 655 816	941	682	1 092	519 744	762

Notes: Chinese honey comprised about 50% of UK honey imports and was the cheapest variety available. In early 2002 Chinese honey was banned from entry to the EU due to the presence of Chloramphenicol residues, prices of other varieties immediately began rising. In early 2005 Chinese honey was again allowed entry to the EU and prices have been falling as a result.

Annex 5: Details of UK Honey Imports, 2004

Country	Qty= Tonnes	CIF Value = £	£/Tonne
China*	0.03	623	24,920
Israel*	4	10,222	2,763
Jamaica	10	13,100	1,365
Ukraine	21	26,162	1,271
Croatia	44	90,931	2,090
Canada***	91	177,444	1,940
Tanzania	118	111,125	943
USA	128	180,253	1,411
Chile***	163	313,991	1,923
Zambia***	174	228,080	1,311
Turkey***	278	540,494	1,943
Uruguay	376	504,839	1,343
New Zealand*	489	2,271,157	4,642
India	548	188,522	344
Bulgaria***	651	975,143	1,497
Guatemala	736	1,184,367	1,609
El Salvador	858	163,441	190
Cuba	862	1,147,402	1,331
Romania	1,016	1,440,090	1,417
Australia	1,264	2,670,358	2,112
Brazil**	3,621	4,335,034	1,197
Mexico**	3,819	4,983,122	1,305
Argentina**	3,934	4,956,203	1,260
Vietnam**	4,471	493,867	110
Totals	23,676	27,005,970	1,141

Notes:

- * These figures include some small quantities imported in jars at a much higher price than bulk honey. eg New Zealand, China, Israel etc. About 0.5% of imports by weight.
- ** Average value £4,628 per tonne Brazil, Mexico, Argentina, Viet Nam comprise 67% of all imports, average price is £932 per tonne.
- *** Speciality honeys comprise about 10% imports by volume, average value £1,646 per tonne. eg Chile, Zambia, Bulgaria, Canada, Turkey etc.

Annex 6: Zambian Organic Certification Management Plan

Organic Certification Management Plan Overview

North Western Bee Products is a complex operation linking over 6,000 beekeepers scattered throughout 75,000 sq km of pristine forest in central Africa with consumers of organic products in the West. These beekeepers are from isolated communities with some of the lowest income levels in Africa. Sale of honey and beeswax is the only source of income for some of these communities and the organic status of the products is vital for the viability of this trade.

In order to safeguard this trade the Soil Association Certification Ltd and North Western Bee Products have agreed this management plan as a framework for ensuring implementation of Soil Association Standards. By this means it is hoped that vital resources will not be wasted in Zambia on the implementation of procedures which at the next inspection are found to be non compliant.

The management plan is to be seen as a framework within which the many detailed Standards apply. For the sake of clarity it does not include all areas covered by the Standards, NWBP staff should familiarise themselves with the Standards as well as this document.

1. BEE FORAGE

Beehives are scattered throughout all the most remote parts of the project area which consists of 7.5 million hectares of essentially uncultivated forest areas. Agriculture is limited to subsistence crops grown in forest clearings with rare use of agricultural chemicals, there are some small plots (< 0.1 hectare) of market gardens near District HQ markets. There is some use of artificial fertiliser around Litoya (Kabompo route 6) therefore products from this area are not sold as organic.

It is not possible to provide detailed maps of individual hive locations due to the manpower required to record position of approximately 300,000 hives. NWBP provides maps showing the location of groups on the largest scale maps available, it can be assumed that 95% of honey is gathered from flowers within a 20 mile radius of the group village.

Bee forage therefore falls within standards 6.510 and 6.511.

2. BEEKEEPING PRACTICES

Empty bark hives are hung up deep in the forest, mostly away from fields and human settlements. Wild swarms occupy the hives and are later cropped for honey combs which are pressed or taken back to the village for processing. There is no feeding of sugar to bees (sugar is more valuable than honey) and no treatment of bees with veterinary medicines (no diseases are present due to an unbroken tradition of organic bee husbandry, in any case beekeepers have difficulty affording medicines for their families). Other restricted and prohibited practices are not carried out.

Beekeeping practices therefore fall within standards 6.505 to 6.509, 6.514 to 6.540.

3. PROCESSING OF HONEY BY THE BEEKEEPERS

Comb honey is graded and then packed into food grade plastic buckets in the forest and transported back to the villages. The honey is then pressed using imported honey presses designed for pressing heather honey in UK and Germany. Honey not suitable for sale to NWBP is used for honey beer brewing, the majority of honey produced is actually used for this purpose. Buckets are washed in water from potable sources such as wells before use. Buckets of honey are kept in the village storehouse until the NWBP team arrive for buying.

4. PURCHASING FROM THE BEEKEEPERS

Most honey and beeswax is purchased in the field by the mobile team which travels to the isolated villages by truck. The extension worker / consolidator and group chairman accompanies the team as it buys the produce from the beekeepers. Most honey and beeswax purchased in the field comes from registered beekeepers. The presence of the beekeepers registration number on the purchase documents and Extension Worker's / Consolidator's Log Book is the required 'check on organic status'.

As the consolidator does not physically handle the goods or receive them into storage there are no premises to be cleaned and hence nothing to apply 'Cleaning Schedules' etc to.

Some honey and beeswax is bought to the depots for sale by non-registered beekeepers, e.g. young or very old beekeepers, refugees etc. As a Fair Trade organisation NWBP does not wish to deny any section of the community access to its services. Products from non-registered beekeepers are therefore labelled 'Non Organic' and purchased at the same price as organic. Non organic products are stored in separate areas of the warehouse, processed separately and listed separately on documents if exported.

The presence of the beekeepers registration number on a bucket of honey or block of wax indicates it's organic status. If the number is missing or illegible then the product is considered to be non organic. Separate areas have been established and marked for storage of organic and non organic products. Non Organic products are sold to local markets, organic products are exported.

Non organic products are listed on separate pages of financial monitoring forms, stock ledgers etc.

5. PROCESSING OF HONEY AND BEESWAX BY NWBP

Buckets of honey are stored at either Kabompo or Mwinilunga depots in specially designed honey stores which retain a cool temperature year round. Honey is then graded by the QC officer and the selected grades packed in wax lined steel drums for export. (Wax lined drums approved by Certification Committee RH 09 02 01)

6. REGISTRATION OF BEEKEEPERS

Beekeepers registered on the old system between 1996 and 2000 will be issued with the new '**Beekeepers Record Books**' which contain a contract to be signed by the beekeeper and NWBP. Each beekeeper issued with a book will be assigned a producer number and his details entered into the **Membership Register**.

Any new beekeepers, e.g. young people or people moving into the area for the first time are first interviewed by the group chairman and have the rules of organic honey production explained to them. They are then registered in their local Extension **Worker's Log Book**, and issued with a record book. New members can only be registered in the presence of the extension worker. The registration of beekeepers will be done at any convenient time, such as during bucket distribution or buying of honey.

The extension workers will forward a list of all registered producers to their local depot during each marketing season. Copies of these lists are kept at the Kabompo Office, forming the register of all the beekeepers in the project area. These lists are compiled in consultation with the group chairman, who knows all the registered beekeepers in his area. The list includes all registered beekeepers, whether active or inactive.

It is recognised that the membership register will never be 100% accurate, such a large membership database will not be completely accurate even when compiled in the UK with all the benefits of modern communications. Reasons for inaccuracies are:

- Use of multiple names is normal in the communities.
- Beekeepers are mostly illiterate.
- Typing and copying errors.
- Data management errors.
- People often shift their villages.

The effect of these errors is usually that the beekeeper is included somewhere on the membership list but it is hard to locate where. Often the extension worker can help as he personally knows the beekeeper's history and can guess where the problem has arisen. The lists in the Extension Workers Log Books are the definitive lists, these are updated every year and the central membership register checked against them.

7. TRACEABILITY

The aim of this system is to make it possible to trace back from a jar of honey or beeswax product in the UK to the beekeepers who produced the honey and beeswax in Zambia.

When honey is purchased a **Bucket Label** is fixed to the bucket showing the producer number and other information about the producer. The beekeeper carves his registration number into his cakes of beeswax. During buying or receipt into stores the presence of this registration number constitutes the required Check on Organic Status.

When honey is packed into drums at NWBP this producer number is recorded against each drum number on the **Quality Assurance Certificate**. When these drums are eventually packed in UK this information is recorded on Production Records. A similar system identifies which producers contribute to each batch of refined wax produced.

Honey purchased from beekeepers is also recorded in NWBP **Financial Monitoring Forms, Extension Workers' Log Book** and in the **Beekeeper's Record Books**.

8. INTERNAL MONITORING

Due to the large number of small producers (annual sales per beekeeper about £25) the only way to organise certification in a cost effective manner is via the Group Registration Scheme. In this case it has been agreed on 28 01 01 that the 'operator / consolidator' shall be defined as the approximately 30 extension workers. These extension workers are elected from amongst the beekeepers in an area and are able to read and write. An up to date **List of Groups and Extension Workers** is kept by NWBP

The reason for basing the system on the extension workers are that internal inspections of the extension workers will focus on the monitoring of quantifiable activities such as record keeping, training of producers etc. The alternative of working with group chairmen was considered unworkable as they are mostly illiterate and would be relying on the extension workers to complete the records. The role of the group chairman is to coordinate activities within the group and to exert authority over members to avoid disputes over beekeeping territories, control distribution of buckets etc.

Every month each extension worker reports to the NWBP depot with information about beekeeping activities within the 10 or so groups in his area. If he has received any reports of events which could be considered to threaten the organic status, such as use of chemicals on crops, or actions by beekeepers such as using a bucket for anything except honey or water, this is entered into the **Non Compliance Incidents Register**. NWBP management then decides on and records the appropriate action in each case. Non compliance by individual producers will be dealt with according to a system of penalties listed in the **Non Compliance Procedure**.

Each year all extension workers are inspected by NWBP. These inspections will aim at proving that the extension workers are ensuring organic honey production in their areas and that any threats to organic status have been detected and evaluated. These inspections are recorded on the **Internal Monitoring of Extension Workers** file.

9. QUALITY ASSURANCE

NWBP has appointed a QA manager whose task is to ensure that all organic products sold are up to SA Standards as well as all relevant legislation in the importing countries. These are summarised in the **Product Specifications**. All Organic products leaving the factory must be accompanied by a **QA Certificate**.

NWBP controls the quality of its products from the beekeeper cropping honey in the forest up to the drums sealed ready for export. These controls are summarised in the **QA System** which specifies the indicators used to make judgements on non compliance at any point in the system and the actions that have to be taken in each case.

An integral part of the QA System are the **Cleaning Schedule**, **Pest Control Records** and **Complaints Register**.

Annex 7: Export Quality Assurance Checklist

Action	Quality Control	Non Compliance	Further Action	Responsible
<u>Beekeeper</u>				
Grading	Only ripe honey selected		Use for beer brewing	Beekeeper
	Reject combs with excess pollen and brood		Use for beer brewing	Beekeeper
Packing	Clean Buckets with boiling drinking water			Beekeeper
	Check lid fits well.			Beekeeper
<u>Buying</u>				
Buying Honey	Check water content	Water content > 19%	reject, train beekeeper	Buyer
	Check for pollen, wax etc	wax etc > 10mm	reject, train beekeeper	Buyer
	Check overheating	non typical smell	reject, 1 yr ban	Buyer
	Check beekeeper is registered	not registered	reject	Buyer
	Label Bucket	buyer responsible		Buyer
	Update beekeepers record book	buyer responsible		Buyer
Buying Beeswax	Check for adulteration	excess dirt, dark colour	reject, train beekeeper	Buyer
<u>Storage at Depot</u>				
Unloading	Check for open lids, cracked buckets etc	Store seperately.	Sell to beer brewers.	QA Mgr
	Check labels in place.	no label	Relabel	QA Mgr
Storage	Store in cool grass roofed honey store house	average temp. above 25C	Sell to beer brewers.	QA Mgr
	Monitor and control pests.	Pest register not up to date.	inform general manager	QA Mgr
	Clean store regularly	cleaning register not up to date	inform general manager	QA Mgr

Action	Quality Control	Non Compliance	Further Action	Responsible
Filling Drums				
Prepare Drums	Check drum and lid intact. Clean drums with hot water Rinse with cold water Line drum with beeswax Check all metal coated in wax. Attach drum label: drum no. batch no., etc.	reject damaged drums	sell locally	QA Mgr QA Mgr QA Mgr QA Mgr
Fill drums	Check quality of honey in buckets Maintain cleanliness of working area Record producer numbers for each drum.	gaps in wax coating honey > 19% water honey with excess pollen, bees etc honey > 10mm wax etc honey tainted wash down frequently reject unlabelled buckets	re- wax reject, sell locally reject, sell locally reject, sell locally sell locally	QA Mgr QA Mgr QA Mgr QA Mgr QA Mgr QA Mgr
Beeswax				
Grading Settling Packing	Separate dark wax Melt and settle dark wax for 7 days Break large blocks Pack 50 kg wax into each sack. Fold and seal tightly	Colour Colour > 5kg		QA Mgr
Prepare for Despatch				
Seal drums QA sign out	Check clamp ring is tight QA certificate issued by QA mgr. Store under cover in cool place	Use new ring if necessary. Gen mgr to check QA Cert Temp < 25C		QA Mgr Gen Mgr QA Mgr

Annex 8: FLO Fairtrade Honey Criteria

I. Criteria and Purchase Conditions for fairly traded Honey

A viable alternative for disadvantaged producers

(Version per September 2001)

1. Introduction

With Fair conditions for honey from developing regions, the Fairtrade Labelling Organizations (FLO) seek to change the unfair international trading structures and improve the social and economic circumstances of small beekeepers, in particular in developing regions, by giving beekeeper organizations direct access to the market at more just trading conditions, thus enabling them to operate independently of intermediary traders and providing them with the tools to enable them to master their own development process.

2. Criteria regulating the participation of beekeeper organizations in the Fair Trade market under the FLO conditions

Producer organizations meeting the following criteria can apply for inscription in the Honey Producer Register of FLO:

- 2.1 The majority of the members of the organization are small scale producers of honey. By small producers are understood those not being structurally dependent on hired labour, managing their bees mainly with their own and their family's labour-force.
- 2.2 The organization is independent and democratically controlled by its members. This means that the members of the organization participate in the decision-making process which determines the general strategy of their organization, including decisions related to the use of the additional resources available through advantageous Fair Trade conditions.
- 2.3 Administrative transparency and effective control by the members and its board over the management minimising the risk of irregularities and offering the members the necessary instruments to be able to act adequately in case of fraud.
- 2.4 The organization's philosophy is based on the concept and practice of solidarity.
- 2.5 No form of political, racial, religious or sexual discrimination is practised.
- 2.6 The organization is statutorily open to new members.
- 2.7 The organization is politically independent, and there are sufficient guarantees that the organization will not be used for any political interests or party.

3. Sustainability

FLO and the producer organizations both engage themselves in setting the basis for sustainable development within their organization by giving room to:

- integral economic development encouraging diversification of production in order to diminish dependency on one single product;
- integral organizational development, improving the managerial and administrative capacity of the actual and future leadership of the organization and ensuring full participation of the members in the defining of policies and the employment of additional income resulting from Fair Trade;
- integral social development, creating better living conditions for the members, their families and the communities they live in;
- integral sustainable development, applying production techniques which respect the specific ecosystems and contribute to the conservation and sustainable use of the natural resources, in order to avoid to a maximum - totally if possible - the use of chemical inputs;
- integral human participation, allowing women in particular to play an active role in development issues in general and specifically in decision making processes within the organization;

- improvement of the quality of the product as a strategic requirement for small producers to defend themselves on both the Fair Trade Market and the regular market.

4. **Product description** (Standard International Trade Classification)

4.1. Definition

"Honey is the sweet substance produced by honey bees from the nectar of blossoms or from secretions of or on living parts of plants, which they collect, transform and combine with specific substances and store in honey combs."

4.2. Description

"Honey essentially consists of different sugars, predominantly glucose and fructose. Honey also contains proteins, amino acids, enzymes, organic acids, minerals, pollen and may include sucrose, maltose, melezitose and other oligosaccharides (including dextrins) as well as traces of fungi, algae, yeasts and other solid particles. The colour varying from nearly colourless to dark brown. The consistency may be fluid, viscous or partly to entirely crystallised. Flavour and aroma varies according to the plant origin."

5. **Quality***

- Basically the honey has to fulfil the EU *and Swiss* quality standards (general description as above).
- It must not have any objectionable flavour, aroma or taint absorbed from foreign matter during the processing and storage. It must not have begun to ferment or be effervescent. *Honey must be free of any residues caused by medical application against bee illness (f.e. varroasis, foulbrood, etc). Honey must not contain any foreign sugar.*
- The honey should be free of foreign matters such as mould, insects, insect debris, sand, etc.
- Eventual feeding of sugar has to be limited strictly to the non productive season and in addition has to be kept at the absolute minimum necessary.
- Quality control prior to shipment has to be carried out through an independent agent unless otherwise agreed between seller and buyer.
- Only new export quality barrels should be used for bulk shipment.

6. **Quantities**

In order to give access to Fair Trade conditions to a greater number of bee keeping families and in order to avoid the concentration of benefits in the hands of a few commercial honey producers, Fairtrade Labelling Organizations will put an emphasis on limiting inscriptions of beekeeper associations to those, where members manage bees mainly with their own and their family's labour force.

7. **Pricing**

- Basis for the pricing is the commitment of Fair Trade organizations to offer a price covering all production costs including a comparatively good remuneration of labour, allowing members and their families adequate living conditions and leaving producer organizations with a margin to pay for supporting services to beekeepers and social development activities within the community.

*) In order to be suitable for exporting to European countries, the honey sold should conform with the following technical standards (unless otherwise agreed upon between buyer and seller):

- The allowed maximum content of moisture is 20%. Lower maximum contents of moisture for specific provenances and types of honey may be mutually agreed on between sellers and buyers.
- The Hydroxymethylfurfural (HMF)-content should not be above 12 mg/kg at the time of shipping. In order to keep the HMF-value low, the honey should also not be homogenised by the producer organization unless agreed on otherwise with the buyer.

- Regular records on the cost of production are made by each producer organization inscribed in the Honey Producers Register of FLO.
- The minimum price fixed for any transaction of honey under FLO conditions is fixed at no less than U\$ 1.650,- FOB per MT for the A Quality and U\$ 1.500,- FOB per MT for the B Quality. The definition of both honey qualities is explained in the annex.
- An additional premium of U\$ 200,- per MT has to be paid for certified organically produced honey, increasing the minimum FOB price to no less than U\$ 1.850,- and U\$ 1.700 per MT for the A and B quality respectively.
- The Honey Register Committee reserves the right to adjust the minimum price if considered necessary.

8. Credit / Payment

- On request of the seller, the buyer shall make available up to 60% of the minimum value of the contract in credit facilities in favour of the seller upon the signing of the Letter of Intent, or at any date thereafter at the wishes of the seller, however **at least six weeks prior to shipment**. The corresponding interest charges shall be covered by the seller at current commercial interest rates (or better) in the country of destination. Reimbursement of the loan and the interest charges shall be according to the terms and conditions mutually agreed upon in the separate credit contract.
- Unless other mutual agreement payment shall be net cash, minus eventual advance payments, following a quality control accepted by both parties prior to shipment and against a full set of documents on first presentation (FOB).

9. Continuity

To allow producer organizations a certain continuity in their markets buyers should guarantee minimum orders for the period of at least one year. Renewals are to be effected at least three months prior to expiry.

September 1999

Definition of the quality standards for honey

Honey traded under FLO conditions will be classified into two categories, according to its quality. Relevant for differentiating the quality, two criteria standards are defined: water content and Hydroxymethylfurfural (HMF). For each category points are given according to following scheme:

Table 1: Assessing the water content in honey

<u>Water content (% Chataway)</u>	<u>Points</u>	<u>Factor</u>	<u>Max. points</u>
16.9 % or less	5	4	20
17.0 - 17.5	4	4	16
17.6 - 18.5 %	3	4	12
18.6 - 19.0 %	2	4	8
19.1 - 19.5 %	0,5	4	2
19.6 % or more	0	4	0

Table 2: Assessing the HMF content in honey

<u>HMF content (ppm)</u>	<u>Points</u>	<u>Factor</u>	<u>Max. points</u>
5.0 or less	5	3	15
5.1 - 9.9	4	3	12
10.0 - 12.0	3	3	9
12.1 - 15.0	2	3	6
15.1 - 20.0	1	3	3
20 and over	0	3	0

If the total number of points of the two established quality standards are added, 35 points can be reached as a maximum. According with this method two categories of qualities are defined:

A Quality: Each kind of honey, which gathers 18 or more points.

Quality: Each kind of honey, which gathers 17 or less points.

The quality control prior to shipment has to be carried out through an independent agent unless agreed on otherwise between seller and buyer.

September 1999

Honey Producers Register of FLO

c/o FLO International
Kaiser-Friedrich-Str. 13
D-53113 Bonn
Germany

Tel. +49-228 / 949230
Fax +49-228/ 242 17 13
E-Mail: o.nielsen@fairtrade.net

Annex 9: Soil Association Organic Honey Standards

Standards for individual livestock categories

Honey production

Revision 14 2002/2003

Principles

1. 5.06.01 Beekeeping is an important activity that contributes to the protection of the environment and agricultural and forestry production through pollination by bees.
2. 2 The organic status of bee products depends on the nature of the hive management and treatments applied, the quality of the foraging environment and on the conditions for extraction, processing and storage of bee products.

Required

3. When an operator runs several beekeeping units in the same area all the units must comply with the requirements of this regulation. By derogation from this requirement, an operator can run units not complying with these standards provided that all the requirements of these standards are fulfilled with the exception of the provisions laid down in paragraph 5.06.11 for the siting of the apiaries. In that case, the product cannot be sold with references to organic production methods.

Note. This means that an operator with organic apiaries can also have apiaries in non-organic areas, provided that they are managed according to these standards in all other respects. Obviously honey or other products from such apiaries cannot be sold as organic.

Origin of stock and conversion

Required

4. In the choice of breeds, account must be taken of the capacity of bees to adapt to local conditions, their vitality and their resistance to disease. Preference should be given to the use of European breeds of *Apis mellifera* and their local ecotypes, or the native species and breeds from the area where the honey is produced.
5. Apiaries must be constituted by means of the division of colonies or the acquisition of swarms or hives from organic units.

Permitted

6. A maximum of ten per cent per year of the queen bees and swarms can be brought in from non-organic origin provided that the queen bees and swarms are placed in hives with combs or comb foundation coming from organic production. In such cases no conversion period applies.
7. Until 24 August 2002, swarms on their own may be brought in from non-organic apiaries, subject to the conversion period in paragraph 5.06.08.
8. Bee products may be sold as organic only when the provisions laid down in these standards have been complied with for at least one year. During the conversion period the wax must be replaced according to the requirements laid down in paragraphs 5.06.41 and 5.06.45.

Note. This means that during the conversion period of one year, the wax must be replaced either with organic wax or, where this is not available and subject to permission from the certification body, with non-organic wax derived from cappings.

9. Conversion of existing hives in the production unit that do not comply with these standards subject to the conversion period in paragraph 5.06.08.

Restricted

10. Reconstitution of an apiary when organic hives are not available in cases of high mortality of bees caused by health or catastrophic circumstances, subject to the conversion period in paragraph 5.06.08.

Sitting of the apiaries**Required**

11. The sitting of the apiaries must:
 - a. Be on areas of land that are certified as organic.
 - b. Ensure enough natural nectar, honeydew and pollen sources for bees and access to water.
 - c. Be such that, within a radius of four miles from the apiary site, nectar and pollen sources consist essentially of organic crops and/or uncultivated areas (spontaneous vegetation) and crops not subject to the provisions of these standards but treated with low environmental impact methods such as those described in programmes developed under Regulation (EEC) No. 2078/92 which cannot significantly affect the organic description of the beekeeping.
 - d. Maintain enough distance, if necessary, from non-agricultural production sources that may lead to contamination – urban centres, motorways, industrial areas, waste dumps, and waste incinerators, for example.
12. The requirements of paragraphs 5.06.11, points b, c and d, do not apply to areas where flowering is not taking place, or when the colonies are dormant.
13. A map on an appropriate scale identifying the location of apiaries and the details of their foraging area must be provided to the certification body as provided for in paragraph 1.05.01.
14. The member states may designate regions or areas where organic beekeeping is not practicable. Where no such areas are identified, the beekeeper must provide the certification body with appropriate documentation and evidence, including suitable analyses if necessary, that the areas accessible to his/her colonies meet the conditions required in these standards.

Feed**Required**

15. At the end of the production season colonies must be left with sufficient reserves of honey and pollen to survive the winter.

Permitted

16. Colonies may be artificially fed with organic honey, preferably from the same organic unit, where their survival is endangered due to extreme climatic conditions.
17. Artificial feeding may be carried out only between the last honey harvest and 15 days before the start of the next nectar or honeydew flow period.
18. The following information with regard to the use of artificial feeding shall be recorded: type of product, dates, quantities and hives where it is used.

Restricted

19. The artificial feeding of organically produced sugar syrup, or organic sugar molasses instead of organically produced honey, in particular when the climatic conditions would otherwise provoke crystallisation of honey.
20. Until 24 August 2002, the artificial feeding of non-organic sugar syrup, sugar molasses and honey.

Prohibited

21. Artificial feeding with any other products not listed above.

Bee health

Recommended

22. Disease prevention in beekeeping shall be based on the following principles:
- a. The selection of appropriate hardy breeds.
 - b. The application of certain practices encouraging strong resistance to disease and the prevention of infections, such as regular renewal of queen bees, systematic inspection of hives to detect any health anomalies, control of male broods in the hives, disinfecting of materials and equipment at regular intervals, destruction of contaminated material or sources, regular renewal of beeswax and sufficient reserves of pollen and honey in hives.

Required

23. If, despite all the above preventive measures, the colonies become sick or infested, they must be treated immediately and, if necessary, the colonies may be placed in isolation apiaries.
24. The use of veterinary medicinal products in organic beekeeping shall comply with the following:
- a. They can be used in so far as the corresponding use is authorized in the member state in accordance with the relevant community provisions or national provisions in conformity with Community law.
 - b. Phytotherapeutic and homeopathic products shall be used in preference to chemically synthesized allopathic veterinary medicinal products, provided that their therapeutic effect is effective for the condition for which the treatment is intended.
 - c. If the use of the above mentioned products should prove or is unlikely to be effective to eradicate a disease or infestation which risks destroying colonies, chemically synthesized allopathic veterinary medicinal products may be used under the responsibility of a veterinarian, without prejudice to points a and b, above.
 - d. Without prejudice to point a, above, formic acid, lactic acid, acetic acid and oxalic acid and the following substances: menthol, thymol, eucalyptol or camphor can be used for infestation with *Varroa jacobsonii*.
 - e. The use of allopathic chemically synthesized veterinary medicinal products for preventive treatments is prohibited.
25. Colonies treated with chemically synthesized allopathic veterinary medicinal products must be placed in isolation apiaries during the treatment period and all the wax must be replaced with wax complying with these standards. Following such treatment the colonies must undergo a conversion period of one year.
26. The requirements for isolation, replacement of wax and conversion as shown above do not apply to treatments using products mentioned in paragraph 5.06.24d.
27. Whenever veterinary medicinal products are to be used, the type of product (including the indication of the active pharmacological substance) together with details of the diagnosis, the dosage, the method of administration, the duration of the treatment and the legal withdrawal period must be recorded clearly and declared to the certification body before the products are marketed as organically produced.

Note. Declaring to the certification body before the products are marketed is interpreted as meaning that the relevant veterinary records must be available for inspection at that time, should the certification body wish to view them – they do not have to be sent to the certification body. In particular the records must verify that conversion times following treatments have been adhered to.

Permitted

28. In addition to the above, veterinary treatments or treatments to hives or combs, which are compulsory under national or community legislation, are permitted.

General management and welfare

Recommended

29. Each hive must be individually identified.
30. The certification body must be informed of the moving of apiaries within an agreed timescale.
31. Details of removal of supers, honey extraction and all other operations must be recorded.
32. Particular care must be taken to ensure adequate extraction, processing and storage of bee products. All the measures to comply with these requirements must be recorded.

Permitted

- 33. The replacement of the queen bees involving the killing of the old queen.
- 34. The practice of destroying the male brood only to contain the infestation with *Varroa jacobsonii*.

Prohibited

- 35. Clipping the wings of queen bees.
- 36. Artificial insemination.
- 37. The destruction of bees in the combs as a method of harvesting bee products.
- 38. The use of chemical synthetic repellents during honey extraction operations.

Hives and materials used in beekeeping**Required**

- 39. The hives must be made basically of natural materials presenting no risk of contamination to the environment or the bee products.
- 40. With the exception of products mentioned in paragraph 5.06.24d only natural products such as propolis, wax and plant oil can be used in the hives.
- 41. Wax for new foundation must come from organic production units.
- 42. Only appropriate products listed in section 2.10 may be used for the protection of frames, hives and combs against pests.
- 43. Only appropriate substances listed in paragraph 4.06.16 may be used for cleaning and disinfecting beekeeping materials, buildings, equipment, utensils or products.

Permitted

- 5.06.44 Physical treatments such as steam or direct flame.

Restricted

- 44. Use of non-organic beeswax provided that it comes from cappings, where organically produced beeswax is not available on the market, in particular for new installations or during the conversion period.

Prohibited

- 45. Extraction of honey from combs that contain brood.

Soil Association
Bristol House
40–56 Victoria Street
Bristol BS1 6BY
www.soilassociation.org
Standards department
T 0117 987 4566
F 0117 925 2504
E stan.dept@soilassociation.org

Soil Association Certification Limited
Producer certification
T 0117 914 2412
F 0117 925 2504
E prod.cert@soilassociation.org

Processor certification
T 0117 914 2411
F 0117 925 2504
E proc.cert@soilassociation.org

Annex 10: Honey Grading Photos



Reject: Unripe, unsealed honey: This honey has moisture content above 19%, the bees have not had enough time to evaporate excess moisture. Ripe honey will be sealed with beeswax.



Accept: Ripe, sealed honey: The bees have evaporated the honey to less than 19% moisture and have sealed with beeswax.



Reject: Comb with pollen (coloured dough like substance), white bee larvae and sealed brood containing pupae and adult bees soon to emerge.



Reject: Sealed brood.

Annex 11: Commercial and Pollen Analysis of Rwandan Honey

No results for this analysis yet

	Compounds	Material analysed/ Method	Detection level	Level of action	Number of samples	Results	Laboratory

Annex 12: Rwanda Map



Annex 13: EU Decision 04-432

COMMISSION DECISION

of 29 April 2004

on the approval of residue monitoring plans submitted by third countries in accordance with Council Directive 96/23/EC

(notified under document number C(2004) 1624)
(Text with EEA relevance)
(2004/432/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Council Directive 96/23/EC of 29 April 1996 on measures to monitor certain substances and residues thereof in live animals and animal products and repealing Directives 85/358/EEC and 86/469/EEC and Decisions 89/187/EEC and 91/664/EEC¹, and in particular the fourth subparagraph of Article 29(1) thereof,

Whereas:

- (1) Under Directive 96/23/EC inclusion and retention on the lists of third countries, provided for in Community legislation, from which Member States are authorised to import animals and primary products of animal origin ("the products") covered by that Directive are subject to submission by the third countries concerned of a plan setting out the guarantees which they offer as regards the monitoring of the groups of residues and substances referred to in that Directive. That Directive also lays down certain requirements concerning time limits for submission of plans.
- (2) Commission Decision 2000/159/EC of 8 February 2000 on the provisional approval of residue plans of third countries according to Council Directive 96/23/EC² lists provisionally the third countries which have submitted a residue monitoring plan, setting out the guarantees offered by them in compliance with the requirements of that Directive.
- (3) Due to the evaluations of those plans presented by the third countries listed provisionally in the Annex to Decision 2000/159/EC, the list of third countries complying with Directive 96/23/EC ("the list") should no longer be considered as provisional.

¹ OJ L 125, 23.5.1996, p. 10. Directive as last amended by Regulation (EC) No 806/2003 (OJ L 122, 16.5.2003, p. 1).

² OJ L 51, 24.2.2000, p. 30. Decision as last amended by Decision 2003/702/EC (OJ L 254, 8.10.2003, p. 29).

- (4) Certain third countries have presented residue monitoring plans to the Commission for animals and products not listed in Decision 2000/159/EC. The evaluation of those plans and the additional information requested by the Commission provide sufficient guarantees on the residue monitoring in those countries for the concerned animals and products. Those animals and products should therefore be included in the list for those third countries.
- (5) Certain third countries have not presented residue monitoring plans or have presented insufficient guarantees in the area of residue monitoring for animals and products originally listed in Decision 2000/159/EC. Those animals and products should therefore no longer be included in the list of those third countries.
- (6) In the interests of clarity of Community legislation Decision 2000/159/EC should be repealed and replaced by this Decision.
- (7) The measures provided for in this Decision are in accordance with the opinion of the Standing Committee on the Food Chain and Animal Health,

HAS ADOPTED THIS DECISION:

Article 1

The residue monitoring plans submitted by the third countries listed in the Annex to this Decision are approved for the animals and primary animal products marked with an "X" in the table set out in that Annex.

Article 2

Decision 2000/159/EC is repealed.

Article 3

This Decision shall apply from 1 May 2004.

Article 4

This Decision is addressed to the Member States.

Done at Brussels, 29 April 2004.

For the Commission
David BYRNE
Member of the Commission

ANNEX

Code ISO2	Country	Bovine	Ovine/caprine	Swine	Equine	Poultry	Aqua-culture	Milk	Eggs	Rabbit	Wild game	Farmed game	Honey
AD	Andorra ¹	X	X		X								
AE	United Arab Emirates						X						
AF	Afghanistan		X ²										
AL	Albania		X				X						
AN	Netherlands Antilles							X ³					
AR	Argentina	X	X	X ²	X	X	X	X	X	X	X	X	X
AU	Australia	X	X	X	X	X	X	X	X	X	X	X	X
BD	Bangladesh		X ²				X						
BG	Bulgaria	X	X	X	X ⁴	X	X	X	X		X	X	X
BH	Bahrain		X ²										
BR	Brazil	X	X ²	X	X	X	X	X				X	X
BW	Botswana	X										X	
BY	Belarus				X ⁴								
BZ	Belize						X						X
CA	Canada	X	X	X	X	X	X	X	X		X	X	X

¹ Initial residue monitoring plan approved by veterinary sub-group EC/Andorra (in accordance with Decision No 2/1999 of EC/Andorra Joint Committee of 22 December 1999 – (OJ L 31, 5.2.2000, p. 84)).

² Only casings.

³ Third countries using only raw material from other approved third countries for food production.

⁴ Exports of live horses for slaughter (food producing animals only).

Code ISO2	Country	Bovine	Ovine/caprine	Swine	Equine	Poultry	Aqua-culture	Milk	Eggs	Rabbit	Wild game	Farmed game	Honey
CH	Switzerland	X	X	X	X	X	X	X	X				X ³
CL	Chile	X	X ⁵	X	X ²	X	X				X		X
CN	China		X ²	X ²									
CO	Colombia						X	X					
CR	Costa Rica	X ²	X ²	X ²			X						
CS	Serbia and Montenegro ⁶	X	X	X	X ⁴								X
CU	Cuba						X						X
EC	Ecuador						X						
EG	Egypt		X ²										
ER	Eritrea						X						
FK	Falklands Islands		X										
FO	Faeroe Islands						X						
GL	Greenland		X		X ⁴						X	X	
GT	Guatemala						X						X
HK	Hong Kong					X ³	X ³						
HN	Honduras		X ²				X						
HR	Croatia	X	X	X	X ⁴	X	X	X	X	X	X	X	X
ID	Indonesia						X						
IL	Israel					X	X	X	X			X	X

⁵ Only sheep.

⁶ Not including Kosovo as defined by the United Nations Security Council Resolution 1244 of 10 June 1999

Code ISO2	Country	Bovine	Ovine/-caprine	Swine	Equine	Poultry	Aqua-culture	Milk	Eggs	Rabbit	Wild game	Farmed game	Honey
IN	India	X ²	X ²				X	X	X				X
IR	Iran		X ²				X						
IS	Iceland	X	X	X	X		X	X				X ³	
JM	Jamaica						X						X
JP	Japan		X ²				X						
KE	Kenya												X
KR	South Korea						X						
KW	Kuwait		X ²										
LB	Lebanon		X ²										
LK	Sri Lanka						X						
MA	Morocco		X ²		X ⁴		X						
MD	Moldova												X
MG	Madagascar						X						
MK	Former Yugoslav Republic of Macedonia ⁷	X	X		X ⁴			X					
MN	Mongolia		X ²										
MX	Mexico	X	X ²		X	X	X	X	X	X			X
MY	Malaysia					X ⁸	X						

⁷ Appropriate denomination still under discussion at UN.

⁸ Peninsular (western) Malaysia only.

Code ISO2	Country	Bovine	Ovine/ caprine	Swine	Equine	Poultry	Aqua- culture	Milk	Eggs	Rabbit	Wild game	Farmed game	Honey
MZ	Mozambique						X						
NA	Namibia	X	X				X				X	X	
NC	New Caledonia	X					X				X	X	
NI	Nicaragua	X ²	X ²				X						X
NO	Norway ⁹	X	X	X		X	X	X	X		X	X	X
NZ	New Zealand	X	X		X		X	X			X	X	X
OM	Oman	X ²	X ²				X						
PA	Panama	X	X ²				X						
PE	Peru		X ²			X	X						
PH	Philippines						X						
PK	Pakistan	X ⁴	X ²										
PY	Paraguay	X	X ²										X
RO	Romania	X	X	X	X	X	X	X	X	X	X	X	X
RU	Russia	X	X	X	X ⁴	X		X	X			X ¹⁰	X
SC	Seychelles						X						
SG	Singapore					X ³	X ³						
SM	San Marino ¹¹	X		X									X

⁹ Monitoring plan approved in accordance with Decision of EFTA Surveillance Authority No 223/96/COL of 4 December 1996 (OJ L 78, 20.3.1997, p. 38).

¹⁰ Only for reindeer from the Murmansk region..

¹¹ Monitoring plan approved in accordance with Decision No 1/94 of the EC-San Marino Cooperation Committee of 28 June 1994 (OJ L 238, 13.9.1994, p. 25).

Code ISO2	Country	Bovine	Ovine/caprine	Swine	Equine	Poultry	Aqua-culture	Milk	Eggs	Rabbit	Wild game	Farmed game	Honey
SR	Suriname						X						
SV	El Salvador												X
SY	Syria		X ²										
SZ	Swaziland	X											
TH	Thailand					X	X						X
TM	Turkmenistan		X ²										
TN	Tunisia		X ²		X ⁴	X	X				X	X	
TR	Turkey		X ²				X						X
TW	Taiwan						X						X
TZ	Tanzania												X
UA	Ukraine				X ⁴								
US	United States	X	X	X	X	X	X	X	X	X	X	X	
UY	Uruguay	X	X		X		X	X		X	X	X	X
UZ	Uzbekistan		X ²										
VE	Venezuela						X						
VN	Viet Nam						X						X
YT	Mayotte						X						
ZA	South Africa	X	X	X		X		X			X	X	X
ZM	Zambia												X
ZW	Zimbabwe	X					X					X	

=====